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Antibacterial activity of Leupeol and α-Amyrin acetate isolated from medicinal plant *Alastoniascholaris*

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Abstract: *Natural products perform various function and many of them have interesting and useful biological activity[1]: Researches are increasingly turning for new leads to develop better drugs for viral and microbial infections[2,3].*

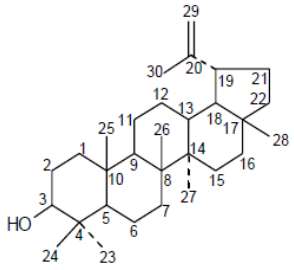
Keywords: *Alstoniascholaris*

I. Introduction

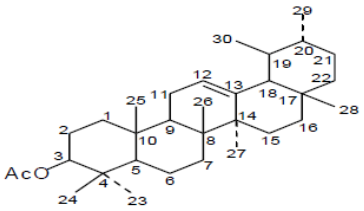
Material and Methods

Active constituents

The seninepure compounds have been isolated from medicinal plants namely *Alastoniaschaloris.* These compounds have been identified using chemical and spectral studies. For this purpose column chromatography is used. These isolated pure compounds were then subjected to anti bacterial activity.



Leupeol



α-Amyrin acetate

Test microorganism and microbial culture

Eight bacterial strains were used in the study

Grampositive bacteria; *Bacillussubtilis, Staphylococcusaureus, S.warneri, Lactobacillus, A.adiacens* and Gram negative bacteria *Escherichiacoli, Pseudomonasaeruginosa* and *Salmonellatyphi.* The test microorganism were obtained from Pathological Laboratory,Santokba Durlabhji, Jaipur. Bacteria strains were cultivated at 37°C and maintained on nutrient agar at 4°C.

Antimicrobial activity assay

Antimicrobial activity was determined against eight bacterial pathogens by the agar disc diffusionassay [NCCLS(NationalCommitteefor ClinicalLaboratoryStandards),2005].

Pure compounds were dissolved in water and C_2H_5OH and then antimicrobial effects were tested. Petri-dishes measuring 90mm each side, containing 20ml of mueller hinton agar concentration of pure compounds dissolved in ethanol and plates were incubated at 37°C for 18-24hrs. The antibacterial activity was evaluated by measuring zone of growth inhibition surrounding the discs. Diameter of inhibition zone was measured in millimeters by Vernier caliper. All tests were repeated twice to minimize test error.

II. Results and Discussions

This study reports the antimicrobial activity of twoactive compounds namelyLupeol and α-Amyrin acetate isolated from medicinal plant *Alastoniaschaloris*.

In Gram +ve bacteria

1. Bacillus subtills

The biological activity is shown in compound IX and above compounds are of dissolving nature inwater but compound VI show no activity whentreatedwith this bacteria in NA media.

The diameter of effective area is increasing in all groups. But it was significant in compound IX treated with ethanol.

2. Staphylococcus aureus:

The biological activity shows dissolving nature of compound IX in water but compound VI shows no activity when treated with bacteria in NA media.

The diameter of effective area increases in all compounds treated with in ethanol but in compound VI shows no any changes when treated with water.

3.S. warneri

In compound IX the biological activity shows dissolving nature but in compound VI it shows no activity.

The diameter of effective area increases in all compounds treated with ethanol but in compound VI shows no any changes when treated with water.

4.Lactobacillus

The biological activity is not shown in compound IX and they are soluble in water, but compound VI shows no biological activity.

The diameter of effective area with both compounds show no changes when treated with ethanol and water respectively.

5.A. adiacens

The biological activity is not shown in compound IX and are soluble in water. The compound VI shows no activity.

The diameter of effective area increases in all compounds treated with ethanol. But in compound IV occursno change when treated with water. In compound IX it was significant when treated with ethanol.

In gram –ve bacteria

6.Escherichiacoli

The biological activity is shown in compound IX and are soluble in water but compound VI shows no any activity when treated with bacteria in agar-agar media.The diameter of effective area increases in all compound treated with ethanol. In compound VI shows no effect on treating with water. In compound IX it was more significant when treated with ethanol.

7.Pseudomonasaeruginosa

The biological activity shown in compound IX and are of dissolving nature in water but compound VI show no any activity when treated with bacteria in agar-agar media.

The diameter of effective area increases in compound IX treated with ethanol.Compound VI shows no any change for effect when treated with water. It was more significant in compound IX.

8.Salmonellatyphi

The biological activity is shown in compound IX. They are of dissolving nature in water but compound VI shows no activity when treated with bacteria in agar-agar media.

The diameter of effective area increases in all compounds treated with ethanol. Compound VI shows no effect when treated with water.

S. No.	Compounds→ Bacteria↓	I		II		Media
		W	E	W	E	
1	*Bacillussubtilis*	x	++	++	+++	NA
2	*Staphylococcusaureus*	x	+	++	++	NA
3	*S.warneri*	x	++	+	++	NA
4	*Lactobacillus*	x	+			NA
5	*A. adiacens*	x	+++			Agar-agar
6	*Escherichiacoli*	x	++	++	+++	Agar-agar
7	*Pseudomonasaeruginosa*	x	++	+	+++	Agar-agar
8	*Salmonellatyphi*	x	+	+	++	Agar-agar

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